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Journal of the Society of Arts.

FRIDAY, JULY 4, 1856.

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MEETING OF COUNCIL.

Wednesday, July 2, 1856.

The Council held their first meeting this day since their election; Colonel Sykes, F.R.S., was elected Chairman for the current year.

The following gentlemen have been nominated Honorary Local Secretaries:—

William Axon, Esq., for Chester.
William Sands Cox, Esq., F.R.S., for Birmingham.
John Darlington, Esq., for Bradford.
William Telkin, Esq., for Nottingham.
Henry Newall, Esq., for Rochdale.
W. M. Tartt, Esq., for Cheltenham.
John Waterhouse, Esq., F.R.S., for Halifax.

As there are at the present time many gentlemen proposed as members who, under the bye-laws, cannot be balloted for until the Society's meetings commence again in November, the Council have directed the Secretary to forward the *Journal* to those gentlemen in the meantime.

The following Institutions have been taken into Union since the last announcement:—

418. Bradford Chamber of Commerce.
419, Sheffield Free Library.

EXEMPTION FROM RATING.

The Bill now before Parliament, for amending the law relating to the exemption of Institutions from local rating, came on for discussion in the House of Commons on Wednesday last, and was well received by the House. The numbers voting in favour were 117; against it, 25. It was arranged for its going into Committee, *pro formâ*, the following day (Thursday), for the purpose of inserting certain amendments. On Wednesday next the Bill again comes on, and from the almost unanimous feeling of members in favour of its object, there is every reason to hope that it will be successful.

ON THE GROWTH OF WINE IN NEW SOUTH WALES.

The following letter has been received from Mr. James King, to whom the Society's Silver Medal has been awarded "for the importation of wine the growth of the vineyards in New South Wales:"—

[These wines consist of four sorts, three white and one red; of the three white wines, two are pronounced by the Society's Committee as satisfactory. One of these is considered to be of fair quality, much resembling *good* Cape wine, but light; the other as good, fair, marketable quality, dry and clean, with considerable body. The red wine is very light, clear tasted, somewhat resembling Bordeaux.]

London, 14th December, 1855,
No. 8, Suffolk-street.

Sir,—In compliance with the wishes of your Society, I have the honour to submit to its examination four quarter-pipes of wine, the growth of New South Wales, made by me during the years 1853 and 1854, at Irrawang, in that colony. This wine was imported by me, about two months since, from Sydney, in the ship *Speedy*, now stored in her Majesty's bonded warehouse, London Docks. I also enclose an order, as you suggested, for tasting and examining the wine there.

By the published rules of the Society, full particulars regarding all colonial articles submitted for examination are properly required; and at present more especially in the case of wines, since that important commercial article has lately so far ceased to be produced by many of the old wine-growing districts of Europe. I, therefore, take the liberty of laying detailed particulars before the Society touching the wine in question, and generally regarding the cultivation of the grape vine in New South Wales.

With regard to the district of the Hunter, in New South Wales, which produced this wine, it consists of the coal formation, overlaid in many places by remote overflowings of volcanic trap, interspersed by tracts of pudding-stone and porphyry. And with reference to the vineyard at Irrawang, where the wine grew, it is situated about three miles equally distant from the navigable rivers Hunter and William.

The soil is that resulting mainly from the decomposition of part of the porphyry and pudding-stone already mentioned. It has been wholly turned over with the spade two-and-a-half feet deep, the top soil being thereby placed at the bottom. The soil varies considerably. Some parts consist of light sandy loam; at other places, of a rich black mould, with a considerable proportion of clay and gravel in its composition. The vines planted as cuttings in 1834 grew freely, but it was not considered fit for them without being previously trenched. The aspect lies to the sun, being north and north-easterly, with considerable inclination in some parts, and elevated about 100 feet above the sea level.

The mode of culture is as follows:—The plants (cuttings originally) are in rows six feet apart, and generally four feet apart in the rows, supported by a single stake four feet out of the ground, generally pruned to short spurs, which mode seems best suited to the climate. The whole ground is dug over one spit in winter with the spade, manured where the growth has become weak, and kept from weeds in summer with the caste, hoe, and spade; all superabundant shoots and fruit are removed as soon as formed; the pruning is generally so managed as to prevent, as far as possible, the removal of either being necessary. The pruning is commenced as soon as the leaves fall; but never carried on after the 1st of August. It ought to be finished as early as possible. Nor is the soil of the vineyard ever moved about that time; the sap of the plant then begins to circulate, and would be apt, in some seasons especially, to flow from any wounds made in the roots or branches, and thereby weaken the future growth of the plants. This experimental vineyard, now alluded to, consists of about six acres. Nine acres were also planted on another spot, which did not require trenching; and four acres, by way of another experiment, were planted on rich alluvial land, on the banks of the William.

No cultivated land, however rich, can be said to be exhaustless—to be ever fertile; the continued removal of crops from its surface, without addition, must in time abstract from it a large proportion of those constituents of the soil essential to their production. When they have been so reduced in quantity, and when merely mechanical turning over and subdivision of the soil have at length failed to render it sufficiently productive (for these operations are well known to have a limit to their influence), recourse must then be had to *proper manuring*, to restore the ingredients that have been so abstracted, so as again to render the soil productive.

The grape vine, although long-lived, from its ability to extend its roots far in quest of nourishment, is, nevertheless, like other organic beings, subject, from deficiency of food, to premature disease, decay, and death; and that deficiency we must make good, sooner or later, in our vineyards, wherever they may be, in order to prolong their health and even existence, and at a period, too, in proportion as their soil was originally poor or rich in the elements essential to the healthy growth of the vine. Overlooking altogether these considerations, or treating them too lightly, may possibly be the reason of the late failures of the wine crop in the old vineyards, rather than in the effect of changed atmospherical influence, as the supposed cause. Careful scientific investigation of the facts and circumstances may possibly discover the true cause, and thereby enable investigators to suggest an effective remedy.

With regard to the kinds of grapes already in the colony, they consist of a vast variety, having been from time to time imported from various parts of the continent of Europe, many of which I have planted, and found them unsuited to the climate, although of high reputation in France. I am still experimenting, to discover, if possible, the best sorts of grape to plant for wine in the colony. I have at last discarded all European recommendations in favour of particular varieties, and I am endeavouring to find out what character some of them really merit in New South Wales alone. This can only be determined by time and local experience. I have heard with astonishment persons of experience in France state, with great confidence, that such and such a grape should be cultivated in New South Wales, whilst, at the same time, they were utterly ignorant of the climate of that country, on which so much depends. The produce of the same grape in different countries is therefore dissimilar.

My humble opinion now is, that the grape which grows freely, bears well, most regularly, and at the same time brings its fruit to the highest perfection in that climate (no matter what its foreign character may be), is the grape that will produce the best wine, and be the most profitable to cultivate in the colony; and that is the grape I have been seeking for. I have therefore at present planted Gonais, Verdeilha, and Shepherd's grapes, most extensively, for the growth of white wine; and Black Pineau, Grey Pineau, and Lambrusquat, for that of red wine. Other varieties may yet be found superior to these, and in proportion, too, as the grape vine is acclimatised to the locality, with the greater probability.

Making the wine requires more care and judgment on the part of the wine-grower than any other part of his business. At Irrawang, the ripe fruit is gathered first into glazed earthen flat dishes; the unripe and damaged berries being then pinched off, and thrown away; the bunches are then thrown into tight tubs, and carted to the wine-house; the stalks are partly removed, and the whole of the grapes broken. The fruit so reduced to a half liquid mass is immediately thrown into tubs of about 150 gallons each, and therein allowed to ferment, which commences spontaneously, and is sufficiently advanced in from one to three days (according to the temperature) for the wine to be drawn off into casks, where it completes the fermentation. There can be no fixed period for the continuance of that process, since it is modified by the temperature of the place, temperature of the juice, state of the atmosphere, chemical composition of the must (which differs every season), the bulk of the mass operated on, &c. &c. The fermentation now proceeds more slowly in the casks, the wine having been partially cooled by the mere drawing off; when it ceases altogether, the bungs are put down tight, taking care to keep the casks full. The skins, &c., left in the tubs, after drawing off the wine, are immediately pressed, but first removing all that have become acid. The liquid which flows from them by the pressure is preserved apart from that which has been drawn from the tubs as an inferior wine. The skins, &c., are now removed from the press; a little hot water is thrown over them, enough to moisten them well; they are again submitted to pressure, and what liquor is now squeezed from them is, at a convenient time afterwards, introduced into the still, from which brandy is procured.

When the wine becomes still in the casks, the insoluble ferment settles at the bottom; the wine is then drawn into clean casks, previously well smoked with burning sulphur; and this drawing is done as often as there is any considerable deposit found, and the more frequently when the wine remains turbid; in that case a little fining is added.

There are many reasons why this racking, as the experts call it, should only be done in cool weather; carefully observing all along what has already been mentioned, to keep the casks full and the bungs tight. The wine is now left to the slow operation of arriving at maturity.

Such is the process by which the wine under examination was made, being the mode now always practised at Irrawang.

The maturation process consists of various spontaneous chemical changes which the wine undergoes at a moderate temperature; and these decidedly improve its quality. When the degree of that temperature is too low, the process of amelioration is stopped or retarded; and when too high, other processes may be generated, which will deteriorate the quality of the wine. At the same time these actions, involved in perfecting the wine, are exceedingly slow, and cannot be greatly facilitated by art. All that can be done is to rack the wine occasionally, always into sulphured casks, at the same time exposing it to the air when the atmosphere is near 45° of temperature; when above that degree, exposing it as little as possible. Store it in temperate still cellars, and leave it to time.

The principal changes which wine thus undergoes, during the ripening process, are—it loses a portion of its sugar, which is converted into alcohol; a part of its free acid, in the shape of tartar, is precipitated; and another part combines with some of the alcohol, to form a peculiar æther (œnanthic), which gives the esteemed bouquet to all wines; the remaining leaven, which is apt to cause the formation of acetic acid, becomes oxidised, and is precipitated in an inert state. A portion of the water is slowly evaporated through the staves of the cask, whilst the alcohol is retained; the contents thereby become stronger. Wine, if red, loses some of its colouring matter, &c., &c. There is a well-known law of nature however, affecting materially the operations of the wine-maker in many stages of his process, from the fermentation of the juice to the disposal of the wine in bottle, viz.:—

Chemical action is active in proportion to the volume of the mass acted on; other conditions being the same, it hence follows that wine in a large mass will ameliorate more rapidly, and develope qualities more completely than in a small one. It ought to be contained, therefore, in large vessels till that effect is produced. It may take only a few months, or it may take a series of years, to arrive at sufficient maturity. This depends on the original composition of the wine, the heat of the climate, and other modifying causes. When the wine has at length been sufficiently so perfected, it is necessary to arrest or retard, if possible, this chemical process, which constitutes the ripening to maturity. For that purpose, and in accordance with the law already stated, the mass must be reduced in bulk; and the most convenient mode of accomplishing this, is that which is generally adopted, the drawing it off into common bottles, corking them well, and packing them away in a cool cellar, to remain till the wine shall arrive at perfect maturity. In this case, it may remain a longer or shorter period. But wine forms no exception to the universal law, and therefore the quality which is common to all dead organic substances, to resolve themselves, under ordinary circumstances, into their elementary forms, and which, in the case of wines, aids in its formation, will assuredly, in time, accomplish its destruction. It must not, therefore, be allowed to lay in the cellar too long, for the same chemical decomposition which formed the wine, and promoted its progress to maturity, will in course of time, even in bottle, as certainly cause its deterioration and decay.

The quantity of wine I have hitherto produced is comparatively limited, seldom above 2,500 gallons a-year. I could easily have extended my plantations, but I did not, waiting the result of the first experiments in wine-growing and making. I have latterly sold readily in the colony all I could make, and even had several small orders for England, from persons I was known to, which I supplied. In one instance, I could not supply the quantity ordered. In the year 1850, I sent samples to my friend Baron Liebig, now at Munich, who replies in his letter from Giessen:—

"The wine Pineau Noir, Tinta, and Pineau Gris, indicates a specific gravity ·9920, produces in 100 volumes 16·20 of alcohol; in the same volumes, ·505 free acid, 3·265 dry residue, and ·498 of incombustible ashy constituents. The other white sort (Irrawang) has a specific gravity ·940, contains in 100 volumes 13 volumes alcohol, ·660 free acid; 100 volumes yield by evaporation 3·313 dry residue, which consist principally of saccharine matter, and ·563 ashy constituents. These proportions are met with, in Germany and France, in the moist choice wines. Both sorts contain more alcohol, and less free acid, than the most esteemed Rhenish wines. The soil on which these wines are grown must contain much calcareous matter, for they approach in flavour the wines of Hungaria and Franconia. The red wine has many properties in common with Burgundy."

In a subsequent letter from Giessen, being a reply to one from me, mentioning a mode of effecting, in some cases, a more complete fermentation of grape juice, which I had suggested and adopted, Baron Liebig is pleased to say:—

"Your proposal of mixing the must of the Verdeilho grape with the juice of the Gonais is excellent, and quite adapted to point out the way in which improvements may be effected. This proposal evinces how much you have reflected on the process of wine-making, and how thoroughly you are acquainted with its principles." Last year I sent a few samples of my wine to Paris, consisting principally of vintages 1846, 1851, and 1852 (the local Government having solicited from the colonists contributions for the Paris Exhibition); they were tasted in Sidney along with many other samples previous to shipment, by the Sydney Paris Commissioners, or a Jury appointed by them for that purpose. Mr. Macarthur of Camden and myself only were then awarded the highest medals each, for having there exhibited the best New South Wales wines intended for the Paris Exhibition.

On the same wines being presented at the Exhibition in Paris, Professor Owen happened to be selected and solicited as a Juror to report on all wines exhibited; the following is an extract from that gentleman's report:—

"In the department of Australia (New South Wales), the evidence of the increasing importance of the vineyards of that colony, in the specimens of the wines exhibited by Messrs. Macarthur, King, and Brown, is deserving of special notice.

"The wines include white wines, akin to those of the Rhine; red light wines like those of Burgundy; Mousseux varieties with a bouquet body, and flavour equal to the finest champagnes; Muscats and other sweet wines rivalling the Montignac of the Cape."

"Some of these wines were of the vintage of 1839, bottled in 1842; others had made the voyage round the world in wood. The verdict of the experts was much in their favour, for whereas on the wines of Europe, the numbers indicative of quality ranged from as low as 2 to 18, the lowest number assigned to the Australian specimens was 7, the highest 15, and the average number was 14½, being as high as that of the wines of Austria, and much exceeding that of the wines of the Cape or any other wine-producing colonies."

The ultimate result of the Jury's report on any of these wines was not known while I was in Paris where I remained nearly a week after the closing of the, Exhibition, and I have not been informed of it since my return to London. Mr. Macarthur, of Camden, however, has kindly promised to inform me as soon as it comes to his knowledge.

At the time I forwarded the samples to the Paris Exhibition, I also forwarded duplicates of them to Baron Liebig, at Munich. A few days after my arrival in London from Sydney, I saw that gentleman here, then on his way to Munich. He emphatically remarked, that my wines which he had received *were very much improved in quality* since he received the previous samples, and that we would enter fully into their merits when I visited him at Munich.

There is a very prevailing opinion in England, that the wine growers of New South Wales lose sight of their interest by attempting to produce wines resembling the finer growths of France and Germany—a very laudable desire, in my opinion, but I cannot see how they could so injure their interests even if it were the case. It is true their wines happen naturally to resemble, in some degree, the wines of these countries, and it is out of their power to make them more resemble any other. The must of the grape is a complex substance, its composition and qualities are determined by the locality which produces it, unlike the wort of the brewer, a simple artificial compound, variable anywhere at his will, to meet the taste of the consumers of beer. For my own part I may say that I have all along, by minute care and attention, aided by the best information I could procure on the subject, endeavoured to render my wine of as good a quality as possible, so that it might command the most ready sale (and without injury to the quality) in as great a quantity from the acre as would render the business as profitable as possible, and others in their own way, I suppose, have done the same. It would be quite possible, I dare say, to pass it off by foreign names, but not by the grower. I have never attempted to do so, but ever allowed the wine to recommend itself on its merits, giving it no other name than "Irrawang," the name of the property on which it is grown.

I have every reason to believe that the wine of New South Wales possesses great durability; it has, when perfectly sound, improved much by age; unsound wine will not keep. In 1836, I made my first wine, red and white, from plants which had only then been eighteen months planted, and at the time of planting they were merely rootless cuttings. The wine was made in the usual way, racked, fined, put into casks (one of each only), and soon bottled. It continued to improve in quality up to May last, when I tasted the red variety at Irrawang, it then resembled a fine high-flavoured Burgundy. The white variety was all used some years ago; it was equally superior, resembling fine hock. At the time alluded to, only two bottles of the red wine remained; and, unfortunately, my cooper broke one in packing them for me to bring to London. If the other bottle is not broken in its carriage to England, and when I get it out of bond, it will give me much pleasure to present it to the Society for its information, along with a bottle or two of sweet wine, rendered so by boiling the must.

There are a number of wine-growers in various parts of the colony, some of whom produce much more wine than I do; and those vineyards which are planted on alluvial land are very much more productive than mine, averaging at least 1,000 gallons, or even more, per acre, whilst the average product, you may know, of the whole vineyards of France does not exceed 270 gallons per English acre. There is a vast quantity of waste land in New South Wales, eminently fitted for the production of wine of good marketable quality, more especially now since we are aware, by the samples produced, that the climate also is suited for its production.

The discovery of the existence of the gold deposits in the colony have, however, greatly retarded the further formation of vineyards, by raising the price of labour.

But New South Wales will yet, nevertheless, be an extensive wine-growing country, without trenching in the least upon the production of wool, its present staple product, where the many thousands who are annually emigrating thereto, and to Victoria, cannot fail to find profitable and steady employment altogether independent of the gambling allurements of the gold mines, where the advantages, even to the labourer, on the average, are now very questionable indeed.

The wine of New South Wales will improve by a long voyage more rapidly than by lying in the cellars; no time will, therefore, be lost in transmitting it, by length of the voyage, to market. Besides, it will form dead weight for ships carrying wool to England, whilst at present a high price has to be paid in Sydney for sand-stone ballast, useless here, and which has, at some expense, to be removed from the docks.

No nation in the world possesses, or can command, such appliances as Great Britain, to render New South Wales an abundant wine-growing country. She has vast resources in capital, in people, in ships, in stores, with unbounded land in the colony as a reimbursement. She has markets, too, all around, for the various produce of her colony, and thus a great increased demand will consequently be produced for her manufactures in the colony itself, whilst she will enjoy the high satisfaction of rendering, and with profit to herself, a portion of a partially slaving and starving population prosperous and happy. The cultivation of the soil, conducted with intelligence and industry, in producing any article of exchangable value, actually converts every acre of land so employed into a lasting source of wealth, more especially in New South Wales, where much of the best land lies in a state of nature. Even gold-fields, however productive at the outset, are necessarily of circumscribed limits and of exhaustive productiveness. There, working, from exposure, excitement, anxiety, and fatigue, is injurious to the constitutions of men; and the sadly demoralising influence on the majority of those attracted thither, will be traceable through successive generations, even after gold digging has long ceased to be the pursuit of their offspring. With agriculture, no limit can be well assigned to its extent or its productiveness, either in abundance or duration. It constitutes the only durable source of a country's wealth. Poor and degenerated must that community eventually become, which has only its mineral resources to depend on; for that which cannot be reproduced will not render a country permanently great; whilst the physical health of an agricultural community, and the play of domestic and social feelings attendant upon rural occupations, lead to a state of society promotive of comfort and happiness, and render the country the reception of all the influences and institutions of civilised life.

I have the honour to be, Sir,
Your most obedient and humble servant,
JAS. KING.

GOVERNMENT GRANTS TO SOCIETIES AND PUBLIC ESTABLISHMENTS.

A return has lately been made, in pursuance of an order of the House of Lords, dated 5th May, 1856, for "a return of all sums granted in the five years ending 5th April, 1856, to the Royal Society, Antiquarian Society, British Museum, Establishment at Marlborough House, Geological Society, Society of Arts, Entomological Society, and Zoological Society; distinguishing each year, with the manner in which such sums have been expended, distinguishing the salaries or other remunerations given out of the same."

By this return, it appears that the Royal Society has received a grant of £1,000 per annum for the last six years. The details are given in the return; and out of the £1,000 granted for the last year, £780 have been expended as follows:—To Mr. Bachforth, for calculations to be made for comparing the results of experiments on capillary attraction with theory, £50; to Dr. Miller, for the construction and verification of standard meteorological instruments by the Kew Observatory, £100; to Dr. Salter, for inquiries in experimental physiology, £50; to Dr. Frankland, for continuation of researches on organo-metallic bodies, £100; to Mr. Fairbairn, for experiments on boiler explosions, £300; to Mr. Hodgkinson, for prosecuting experimental inquiries on the strength of materials, £100; to Dr. Carpenter, for researches in marine natural history, £50; to Mr. Baxter, for researches in electro-physiology, £30; total, £780; leaving a balance on hand, Jan., 1856, of £148 9s. 4d.

The Antiquarian Society states that "no sum has ever been granted by the Treasury to this Society."

The British Museum has expended during the year ended 31st March, 1856:—Salaries, &c., £26,058 13s. 2d.; house expenses, £2,480 11s. 6d.; purchases and acquisitions, £14,697 7s. 2d.; bookbinding, cabinets, &c., £12,025 15s. 6d.; printing catalogues, making casts, &c., £1,780 5s. 4d.; law expenses, fees, &c., £96 13s. 8d.; excavations, &c., in Assyria, and transport of marbles, £882 18s. 3d.; purchase of the Bernal antiquities, £3,981 16s.

The establishment at Marlborough House returns an expenditure as follows:—1st April, 1851, to 31st March, 1852, £19,098 18s. 4d.; 1st April, 1852, to 31st December, 1852, £14,643 16s. 1d.; 1st January, 1853, to 31st December, 1853, £26,595 11s. 7d.; 1st January, 1854, to 31st March, 1854, £8,084 6s. 9¼d.; 1st April, 1854, to 31st March, 1855, £56,911 10s. 1¼d.; 1st April, 1855, to 31st March, 1856, £81,384 17s. 8½d.; making a total in the five years of £206,719 0s. 7d. These sums include, since the year 1852-53, the expenditure on account of the Geological Surveys, (Great Britain and Ireland) Museum of Practical Geology, Jermyn-street; Museum of Irish Industry, Dublin; Designs Office; Industrial Museum, Scotland; Royal Dublin Society; Meteorological Observations at Sea. The sum expended during the last year appears to have been £81,384 17s. 8d., divided under the following heads:—General management, £4,597 10s. 6d.; Department of science and art, £38,495 16s.; Schools throughout the kingdom in connection with the Department, £23,302 10s. 11½d.; Geological survey (Great Britain and Ireland), £5,152; Meteorological observations at sea, £2,837 0s. 3d.; Royal Dublin Society, £7,000.

The Geological Society states "that no sum of money whatever has been granted to that Society."

The Society of Arts returns that "the Society for the Encouragement of Arts, Manufactures, and Commerce, has been established upwards of one hundred years, and has never during that period received any grant of public money whatever, and therefore none during the period named in the order of the House of Lords."

The Entomological Society states that "the Entomological Society never yet received any grant of public money."

The Zoological Society, in reply, states "that no grants have been made to the Zoological Society by her Majesty's Government at any time; but that, on the contrary, the Zoological Society will have paid to her Majesty's Government, within the five years specified in the order, the large sum of £2,117 7s. 6d., for rent of 26½ acres of land in the Regent's-park, viz.:—1852, £337 13s. 1d.; 1853, £337 13s. 1d.; 1854, £337 13s. 1d.; 1855, £398 12s. 5d.; 1856, £368 2s. 9d."

THE LIBRARY AND MUSEUM, STOKE-UPON-TRENT.

At a meeting of the committee appointed to promote the erection of public baths for the town of Stoke-upon-Trent, held on Thursday, the 8th May last, the Chief Bailiff in the chair, the following resolution was carried unanimously:—" That, in the opinion of this meeting, the eminent services rendered by Herbert Minton, Esq., as a manufacturer, to improve the productions and increase the trade and reputation of the Staffordshire potteries; and the munificent support he has given, during a long series of years, to public objects and institutions of a benevolent kind, both local and national, entitle him to be regarded as a public benefactor; that his recent liberal offer of the sum of five hundred pounds towards the erection of public baths in this town affords a desirable opportunity for giving public expression to the regard generally entertained throughout the country for his public and private character; that this meeting feels assured that the form of testimonial that would be most acceptable and valued by Mr. Minton would be such as would tend to the promotion of objects of public utility, in which he is known to take a deep interest. It is therefore resolved that a separate fund be opened for the erection of a public building of good architectural pretensions, on a site adjoining the proposed baths, in which accommodation shall be provided for a museum to illustrate the art of pottery and its history, ancient and modern; for a free library for all classes; with a studio and appliances to promote art education; such public building to be considered as a testimonial of the public approbation to Mr. Minton, and that his name shall be associated therewith in perpetuity."

Home Correspondence.

THE NEW LIST OF LECTURERS.

Sir,—Permit me, through your columns, to comment upon one of the subjects mentioned at the recent Conference held by the Society of Arts with the Institutions in Union. I allude to a matter connected with the "List of Lecturers" just issued.

For several years the Honorary Secretary to a Literary and Scientific Institution; many times a member of working committees; and, having for the last six years devoted a large portion of my time to professional lecturing, I am well acquainted with the difficulties which Mechanics' Institutions experience about lecturers and and lecturing.

I think, with Dr. Booth, that the Society of Arts, in publishing the Directory of Lecturers just issued, has done all that it can be expected to do. The Society has given to Institutions a great deal of most useful information about the names, addresses, subjects, and terms of both professional and amateur lecturers throughout England, and beyond this it can do nothing.

The embarrassments felt by committees of Literary and Mechanics' Institutions on this subject appear to me to be the result of their own supineness. An evident inclination exists among them to *shirk the trouble* of inquiring for themselves into the suitability and capability of particular lecturers, and to throw the whole onus upon the shoulders of the Council of the Society of Arts.

The Representative from the Yorkshire Union of Institutes, at the instance, I presume, of his Committee, suggested that the Society of Arts should engage and pay certain lecturers, and send them about the country to the Institutions in Union. But this is out of the question. It would be impracticable for a Council, sitting in London, to arrange satisfactorily, as regards the lecture-night, the hour of lecture, the terms, the subject, and so on, for every one of the one hundred and thirty Institutes which are comprised in the Yorkshire Union alone! However nicely adjusted, the whole scheme would be upset by the Institutions themselves. And thus it would be done. The Society of Arts would write to the Institutions, stating that a certain lecturer on a particular subject had been engaged, and would visit all the towns in rotation. Well, one Institution would immediately write up to decline to have him, because "This subject is too dry;" or, "We have had it before;" or, "The terms are twice as much as we can afford;" or, "The night you name won't suit us; our lecture night is such a night, and we can't alter it," or "we *won't* alter it,"—for too often alas! jealousy steps in among Mechanics' Institutions, and where two neighbouring towns have fixed upon the same evening as their lecture night, neither will give way to oblige the other. Then, again, as the only room fit for a lecture in a small town is, generally speaking, the Town-hall, the arrangements may at any moment be disturbed by the Town-hall being required on the evening set apart by some more influential body than the Institution of mechanics; or, perhaps, at the head hotel, a meeting to debate some all-absorbing question of local interest may be advertised for the same evening, in which case the lecture must be "put off," as the town cannot be in two places at once. Then, the lecturers that "go down" at one town will not "go down" at another; hence, as one of the Representatives at the Conference observed, a diversity of opinion exists among Institutions as to the merits of lecturers. Some say of a particular gentleman that he is THE lecturer of the day, others, that he is "used up." At Easy-town, for instance, where there is but little of the *bustle* of business, where quietness reigns, and jog-trot habits are never hurried into a canter from year's end to year's end; where, churches, chapels, and meeting-houses, being plentiful, show that all events there is a great profession of religion in the place; where order (except on solitary occasions, when the town makes a point of getting intoxicated, to fit itself for the duty of returning a member to Parliament) is the one great rule of life; in such a town, where everything moves along with greased wheels, a quiet lecture on science or art will always be respectfully listened to and appreciated. And why? Because, being an easy-going town, at eight o'clock at night the inhabitants are not too fatigued to listen and to learn.

But at Bustle-town this sort of thing would be thought *dreadfully slow;* there all is vitality, and harrass, and over-crowding, and over-reaching, from early in the morning till late at night. Men's minds and bodies are torn and worn, and worried, and tired out, by their several occupations; *and they won't leave their homes after business is over to listen to lectures, however excellent, on dry science, or the intricacies of ornamental art.* Their minds are already over-taxed, and they are neither able nor willing to begin reasoning and arguing, and splitting straws to arrive at profound results. If they go to a lecture, it must be a lecture to soothe or amuse them. The Society of Arts, therefore, in sending a lecturer to take in Easy-town and Bustle-town, which are faithful types of most towns, would inevitably please the one, and displease the other. It had need to be made acquainted with all the inclinations and prejudices of all the towns in the United Kingdom, to be enabled satisfactorily to cater for them. We have Quaker towns, Roman Catholic towns, Unitarian towns, Independent towns, Puseyite towns, Wesleyan towns, High Church, and Low Church towns, Total Abstinence towns, Peace towns and War towns; and especial care ought to be taken to avoid wounding the prejudices of any class of persons in any of these towns. Now, how could the Society of Arts guarantee this? It would, as I have said, be utterly impossible. Dr. Booth seemed to indicate that if the *whole* of the Institutes in Union were to agree to place the matter under the control of the Society of Arts, that then something might be done. But, in the first place, the Institutions *never will* agree to this, and even if they did, for the reasons stated above, the scheme would undoubtedly fail.

The lecturers themselves have tried to assist Institutions, in arranging their lecture courses. Engagements being made to visit certain localities, proposals are sent to the neighbouring Institutions, requesting them to join in, so that the lecturer, by increasing his engagements may lower his terms. Of course this would be a mutual benefit. But how do the Institutions meet it? Too frequently by not even condescending to reply.

My object in writing has been to show the Institutions that neither the Society of Arts nor the lecturers can help them, and that the remedy for the evil of which they complain is in their own hands. They must be self-dependent; they must bestir themselves, and not only correspond with the Society of Arts, but with one another. Let the Societies in each county but unite together, and the result must be beneficial. Of course, if a lecturer is offered five or six consecutive engagements at Institutions within a short distance of each other, the cost to each Society is very moderate. This is perfectly well known, and it is a matter of the utmost surprise to me that it is not acted upon. Why should Institutions pay from four to five guineas for a lecture which, by taking a little extra trouble, they might get for £3 3s., and in the case of very poor Societies, for even less?

I have to apologise for the length of this letter,

And remain, Sir, your obedient servant,
WALTER ROWTON.

REMARKS ON MR. HAWES'S THEORY OF SAPONIFICATION.

SIR,—Mr. Anderson, F.C.S., intending to give a blow to Mr. Hawes, has, in his letter of the 20th June, *struck himself*, and has exerted infinite pains (no doubt most unintentionally) to establish the position Mr. Hawes aims at, as to the quantity of glycerine generally found or formed during the saponification of fatty matters; for Mr. Anderson quotes Vol. V. of the *Chemical Journal*, which states that 5·32 parts of glycerine were found when 100 grains of stearine were operated upon. How is this possible; since all the glycerine in the crude or raw tallow must have been removed before the stearine could be obtained? unless the 5·32 was produced by the action of heat, alkali, and water upon the stearine. If so, then glycerine is a generated, created, or artificial result, arising from some new chemical combinations or atomic changes in the distribution or arrangement of the several molecules of carbon, hydrogen, and oxygen, forming C^6, H^8, O^6, instead of stearine C^{76}, H^{70}, O^8. Then it will follow that the 5 per cent. obtained from stearine, and 5 per cent. said to exist in the raw fat or tallow, will give us 10 per cent., the amount stated by Mr. Hawes, and confirmed by Mr. Wilson. It is impossible to admit the glycerine as an element in stearine, whatever we may infer as to tallow.

I think Mr. Anderson might have been less ample and severe in his comments, particularly when his criticisms are directed against a gentleman already accused of being one of a very trifling *minority*, if not the only individual in the Society of Arts labouring under error in respect to the subject. Mr. Anderson may or may not consider himself called upon to defend the science and dignity of M. Chevreul, whose dictum he presumes, or assumes to be, covertly or directly attacked in the paper read by Mr. Hawes. I deplore my inability to be able to discover any such sinister intention towards the illustrious French chemist elicited by the paper in question. The castigation falls self-inflicted upon the proper blunderer, for M. Chevreul never stated that glycerine is an element or natural component of fatty substances, *but directly the contrary*. Chevreul states that glycerine was discovered by Scheele (not by himself, as stated). In his great work, published in 1813, he says:—"Il démontra que les matières grasses connais sous les noms d'huiles, beurres, graisses, suifs, étaient formées, à part un très petit nombre d'exceptions, par un mélange de principes immédiats, qu'il décrivit sous les noms de stearine, de margarine, d'oleine, de butyrine, de caproine et de phoëenine; que ces *principes immédiats se dedoublaient sous l'influence des alkalis, en principe doux des huiles ou glycerine* et en acides gras particuliers; qu'ainsi la stéarine produsait de la glycérine et de l'acide stéarique, l'oleine de la glycerine et de l'acide oléaque, &c."

If this extract does not hermetically close this controversy, I should infer that Mr. Anderson will be advised by his friends to supplicate the aid of her Majesty's Inspector of Schools,—him of lunar celebrity.

As to the error imputed to Mr. Hawes relative to his statement of the quantity of tallow required to produce a ton of soap, it is worthy only of a place in the pages of *Punch;* for it is well-known that tallow and town fat vary considerably in their proportion of stearine and oleine, in their animal membrane, their free water, &c. Now, it does not require years of experimental labour to know that the stearine will require one dose of caustic alkali, and oleine another; and that these chemical equivalents will govern the dose or equivalent of water to produce a good solid soap; and that the dose of water will determine the character of the soap both qualitatively and quantitively. Every soap-boiler differs somewhat in his manipulations from others of the trade; each treats his goods according to his experience, knowledge, and judgment. Some, if not all, make a mis-fit, which has to be reboiled and manipulated, or to be sold at a less price than goods properly fitted; this proves that the trade have no chemical or practical certainty as to either quantity or quality. The irregularity in the quality of the raw or crude alkalis alone opposes a formidable barrier to exact results. If the years of chemical experiment and years of practical exertions have enabled Mr. Anderson to obtain fixed results as to weight and quality, I can say safely that he is the only man, not only in the British trade, but over the whole world, that has obtained a similar success.

Mr. Anderson, in his letter of the 20th June, says:—"One more experiment more recently performed, *with the greatest attention to accuracy*, in which palm-oil was employed, gave the following results: 14,000 grains of oil gave 13,312 grains of fatty acid, which, calculated for 100 parts gives—

Fatty acids...............	94·38	100·00
Glycerine	5·62	

The ley contained in these cases, in addition to the glycerine, an inconsiderable amount of *gelatinous* matters, always the case when crude fatty matters are saponified, and which, of course, is included in the above 5·62, and, therefore, reduces the per cent. amount of glycerine still less."

Now, does Mr. Anderson, *after the greatest attention to accuracy*, wish to inform us that the palm-oil nut *contains gelatine*, a substance hitherto supposed to be confined to animal productions. When a gentleman exercises such severe criticism and animadversion upon the well-meant labours of another, it is but fair to expect he will at least abstain from the very errors he accuses and deprecates.

Mr. Anderson further states, "That after perfect saponification and decomposition of the soap by stronger acids, on renewed saponification, no more glycerine is obtainable from these fatty acids." But further on he remarks: —"The experiments of Mr. Duffy have shown that glycerine is eliminated under far more improbable circumstances, namely, by acting upon stearine with a solution made by adding alcohol to sodium." He quotes the *Quarterly Chemical Journal* in proof that the *purest stearine* furnished by saponification, 95·59 of fat acid;—does Mr. Anderson mean that the residue 4·41 grains is glycerine? He cannot, as a soap manufacturer, mean that 100 parts of stearine converted into soap yielded 95·59 fat acid, because his soap, being a constant quantity, would contain 6·50 soda and 31·00 water. Now, if this representation is correct, *the purest stearine*, saponified, will give 4·41 glycerine. As a member of the Chemical Society, and a practical chemist, as well as practical soap-boiler, he will perhaps tell us how the glycerine so obtained escaped removal when the crude oil or fat was operated upon to obtain the *purest stearine*, —or whether it ought to be attributed to the action of the alkali, caloric, water, &c., employed in the saponification? If so, Mr. Hawes is correct in his view of the matter, even by Mr. Anderson's own showing.

I believe that it is impossible to subject fatty matter, whether of the animal or vegetable kingdoms, to the action of alkali, water, and caloric, without producing glycerine; and that the longer the goods are exposed to the action of any degree of heat above 200° Fahr., in combinations of soda, potassa, &c., and water, the greater will be the amount of molecular decomposition, and the formation of glycerine.

There are yet many other points in Mr. Anderson's paper that could be refuted, especially his assertion that, "The amount of soap produced from fatty matters by saponification, irrespective of time or treatment, is unvarying and constant; and that the constitution and quantity of the soap itself, from corresponding fatty materials, never varies." I appeal to the whole trade, and to his own books, if he will permit the examination, and I feel satisfied that it is impossible, in the present state of science, to obtain uniform results. This evidence would most palpably contradict the accuracy of the latter part of Mr. Anderson's representations.

As Mr. Anderson coincides with Mr. Hawes in opinion that the production and manipulation of soap is of the greatest importance to the trade and to the public in general, you will, I trust, pardon my inundating you with proofs that the majority of opinions elicited by the leading members of the Society of Arts on that subject are incorrect, thereby confirming the trade and practical men in the ignorant destruction of valuable matter, retarding the progress of sound improvement, and tending to establish the existing rule-of-thumb system. Mr. Anderson attacks with much acrimony the opinions developed by Mr. Hawes in the paper read to your Society on the 28th of March, and accuses him "of aiming at nothing more or less than attempting the annihilation of the theory of M. Chevreul and his followers."

M. Chevreul, in his work upon the Corps Gras, writes, "Les bases, et particulièrement la potasse, la soude, et la chaux, décomposent le stéarine, en présence de l'eau et à l'aide d'une ébullition prolongée. Cette réaction, connue sous le nom de *saponification*, produit de la glycerine hydratée et un stéarate alcalin: le poids de l'acide stéarique libre, après son alimentation du savon par son acide, ajouté à celui de la glycerine, surpasse d'une proportion notable le poids de l'alcali hydraté. Mons. Chevreul s'est assuré que cette augmentation de poids se manifeste dans la saponification de toutes les matières grasses neutres. Ainsi, 100 parties de stéarine donnent 102.6 d'un mélange qui contient 94·6 d'acide stéarique, et 8 parties de glycerine. L'augmentation de poids est due à la fixation des éléments de l'eau."

The free translation of which is as follows:—"The bases, and particularly potassa, soda, and lime, decompose stearine in the presence of and by the aid of water in a prolonged state of ebullition; that reaction, known under the name of saponification, *produces hydrated glycerine*, and a stearated alkali. The weight of the free stearic acid, after its elimination from the soap by an acid, added to that of the glycerine, surpasses in a notable proportion the weight of the fatty matter submitted to the action of the hydrated alkali. M. Chevreul has assured himself that this augmentation of weight manifests itself during the saponification of every neutral fatty matter. Thus: 100 parts of stearine gives 102·6 parts of a compound which contains 94·6 stearic acid, and 8 parts of glycerine. The augmentation of weight is due to the fixation of water."

I, some four years since, endeavoured to convince Mr. George Wilson, F.R.S., of his error relating to the formation of glycerine. He understands the French language, and said he possessed the works of Chevreul, Pelouse, Regnault, &c., yet, in 1856, he bears his testimony and supports opinions upon this important subject, involving a sacrifice of above £150,000 per annum in England only; and it is with pain I see him join with Mr. Anderson, F.C.S., and Mr. Dugald Campbell, Mr. De la Rue, F.R.S, and others, in condemning Mr. Hawes for announcing facts established by M. Chevreul as long back as 1813. These gentlemen stigmatise Mr. Hawes as a perverter and destroyer of the beautiful truths proclaimed by the illustrious French chemist. The absurdity of such conduct will be evident to all who will read the extract I have made.

I am, &c.,
H. C. JENNINGS.

8, Great Tower-street, 26th June, 1856.

RELATION BETWEEN DECIMAL COINS AND WEIGHTS AND MEASURES.

7, Finsbury-circus, June 28th, 1856.

Sir,—The serious objections which exist against the adaptation of decimal coins to our currency again must be pleaded as a reason for my addressing the *Journal* to point out the practical manner by which they may be probably introduced with least injury, and be rendered sufficiently attractive for the mass of the people to desire their adoption.

In my last letter, I recommended for practical use the additional issue of the $\frac{1}{10}$ of a florin and the $\frac{1}{100}$ of a florin, with the super-addition, for adjustment, of little coins of the value of the $\frac{1}{6}$ of the $\frac{1}{100}$ of a florin, the $\frac{1}{12}$ and the $\frac{1}{24}$ of the same to be called respectively, mites, half-mites, and quarter-mites.

Without unnecessarily occupying space in your *Journal* with abstract views on this question, which I have fully considered in my "Sources of Physical Science," I have here to propose that the new coins be brought into relation with our weights and measures, so that tens of centuries hence, upon the discovery of the coins a near approximation may be obtained of the standards of value, length, weight, and capacity used in our towns.

The decat, or $\frac{1}{10}$ of a florin might represent also the $\frac{1}{10}$ of a lb. avoirdupois, the $\frac{1}{10}$ of a foot, the $\frac{1}{10}$ of the $\frac{1}{10}$ of the weight of an imperial gallon of water, and the $\frac{1}{10}$ of the $\frac{1}{10}$ of the bulk of an imperial pint.

To accomplish this object the decat must weigh 700 grains, be the $\frac{1}{10}$ of a foot in diameter, and the metal must either have a sp. g. of 8·75, or, if of copper, have its rim raised to compensate the excess of sp. g., which is from 8·8 to 8·9.

The mil might represent the $\frac{1}{10}$ of the $\frac{1}{100}$ of a lb. avoirdupois, and be half-inch diameter.

The mite should weigh 10gr., the half-mite 6gr., and the quarter-mite 1gr., which would be useful weights for chemists and other dealers in small quantities of matter, and thus coins would be brought into relation with apothecaries and troy weights.

As this letter is merely suggestive, I do not think it necessary to enter minutely into all the practical results which would be obtained by the above system. It is manifest, however, that it would give a basis of a decimal division of value, weight, length, and bulk, and at the same time effect a material relation between the decimal division and the other modes of division now in use.

If the principle be adopted, the nomenclature would have to be carefully reconsidered; and it appears to me, whether we consider value, bulk, surface, weight, or capacity, from five to ten of the decimal divisions shall have definite words assigned to them. At first we shall have both systems in operation at once, but, by degrees, hereafter all divisions not found to be practically convenient might be gradually withdrawn.—I am, &c.,

ALFRED SMEE.

CORT'S CLAIMS.

Sir,—A financial writer has contemplated the possibility in distant ages of natives of New Zealand and other Australian empires, sailing northward to view the ruins of London-bridge. Unless printing be then antiquated by some other art, this posterity may read in their Gazeteers and Topographical dictionaries, such passages as the following:—

" Great Britain.—An active ancient nation, in the northern hemisphere, which, in its day, made a considerable figure in the world. In the 19th century, it was greatly distinguished by its success in useful arts and manufactures, especially in the making of iron, and by a peculiar method of forming iron roads, which, by all remaining accounts, were a vast improvement on the previous imperfect means of moving men and goods from place to place. The natives appear, however, to have been a dull and apathetic people, very fond of their money. Some time after the middle of this century, it was discovered that the process for making the iron for these roads had been perfected about 70 years before, by one man, who was called an inventor, that his children were living in neglected poverty, and that the manufacturers of iron, who had realised 30 millions sterling of profits (here will follow a reduction of this sum to New Zealand currency), subscribed for the relief of his distressed widow a sum amounting to less than one thirty-thousandth part of their gains. The discovery appears to have attracted some attention. That 70 years should have passed in such ignorance seems strange, because there appears to have been a great deal of printing in those days, about useful arts and inventions. But from the specimens which have been preserved of those " newspapers," it appears to have been much the habit to write on a limited series of subjects which were repeated over and over again with an extraordinary perseverance. It must have been this pre-occupation of mind, which prevented attention to common things, even of the most extraordinary character, immediately before their writers. Some eccentric individuals, however, seem to have exerted themselves considerably, to remove from the national honour the stain of ingratitude and stupidity, and to obtain from their national assembly, which had the habit of granting large sums of public money for many curious purposes, a creditable reward and recompense to the 'inventor's' family for so many years of neglect."

Some ill-natured writer, in those future times, might indulge his pen in harsher remarks. It is painful to know that such a history of ingratitude is too true. " Great Britain, the nation which did not even thank the man who saved her 500 millions sterling in seventy years, and raised her to the highest pitch of prosperity," will look better, when it can be added, " however, in the 71st year she repented and made amends." If you can find room for the following petition, it will exhibit that there are men in the kingdom able and willing to wipe out the national disgrace and place us in a decent position with worlds to come.

Mr. Roebuck's overwhelming engagements have hitherto delayed the presentation of this petition, and of another from Mr. R. Cort, declaring the enormous benefits derived from his father's inventions. The honourable member, however, will present both petitions immediately, and no doubt will do all he can to get them printed and distributed, that both Houses of Parliament may be made acquainted with important facts, which appear at present to be known to only a very few of them.

DAVID MUSHET.

July 2nd, 1856.

PETITION.

To the Honourable the Commons of the United Kingdom of Great Britain and Ireland, in Parliament assembled.

The petition of the undersigned manufacturers, consumers, and others, who feel that the nation has greatly benefitted by the use of British puddled and rolled wrought iron, first invented and successfully established in all the royal dockyards by the late Mr. Henry Cort, of Gosport, in the county of Southampton, iron manufacturer; for the safety of our fleets and seamen; for our naval and military defence at home and abroad; for railways, steam navigation, ship building, agriculture, mining, domestic, and other purposes; and, lastly, for securing the independence of the British nation over foreign powers, for an adequate supply of bar iron.

Showeth,

That previous to 1782 the whole population of Great Britain was every year becoming more and more dependent on foreign powers for an adequate supply of bar iron, the total make of pig iron with charcoal fuel being only 17,350 tons, while the export, according to a return from the Custom-house, in 1812, did not exceed 427 tons.

That in 1783 and 1784 two patents were granted to the late Mr. Henry Cort; one for rendering pig iron and other cast metal malleable in an air furnace heated by the flame of pit coal, without the aid of charcoal, or blast of bellows, or cylinders, termed puddling; and the other for rolling the iron into bars, or other forms, at a welding heat, through grooved rollers, never before used, and ever since universally adopted.

That from 1785 to 1854 the make of puddled and rolled iron has continued more and more to supersede the use of foreign iron, except for fine steel. The total quantity of iron made with pit coal in 1854, by the last return from all the iron works, was 3,585,906 tons, from which the total quantity of puddled and rolled iron may be estimated at not less than two millions of tons; while the total quantity of the latter exported on the average of three years ending 5th January, 1855, from a return made to your Honourable House, was 856,738 tons.

That as the iron trade of Great Britain, at a general meeting in 1811, unanimously acknowledged that it was greatly indebted to the late Mr. Henry Cort for these unexampled improvements in the iron industry of the country, whereby enormous sums of money have been less paid to foreign countries for bar iron, and more received from them for British puddled and rolled iron, while the wants of the whole population have been supplied out of materials previously useless, and by the labour of millions of the people, at a saving of more than 200 per cent., compared with the price of foreign iron in 1782.

Your petitioners humbly pray that your Honourable House may be induced to make some adequate provision for the declining years of the only surviving representatives of the late Mr. Henry Cort, being one son and three daughters, only one of whom is under seventy years of age, for having added, by the inventions of their father, at the expense of ruin to himself and family, so enormously to the wealth of the country, year after year, for more than half a century, besides extending its commerce in British iron to all the markets of the world.

And your petitions as in duty bound will every pray, &c., &c.

(Signed)

Anthony Hill, Iron Master, Plymouth Works, Glamorganshire.

Robert Stephenson, M.P., F.R.S., President of the Institution of Civil Engineers.

Crawshay Bailey, M.P., Iron Master, Aberaman Works, Glamorgan.

John Heathcoat, M.P.

Edward John Hutchins, M.P., Chairman of the Rhymney Iron Company.

William James Chaplin, M.P., late Chairman of the South Western Railway.
George Hadfield, M.P.
George Bowyer, M.P.
Sir William Cubitt.
James Simpson, C.E.
Joshua Field, C.E., F.R.S.
James Meadows Rendel, C.E.
Late Presidents of the Institution of Civil Engineers.
George Bidder, C.E., Vice-President of the Institution of Civil Engineers.
Charles Manby, C.E., F.R.S.
Sir Charles Fox.
William Cubitt, M.P.
Wm. E. Boyes, Iron Manufacturer, Swindon-house.
Sanderson Brothers and Co.
Thomas Turton and Son.
Henry E. Hoole.
Charles Sanderson.
Jessop and Son.
Naylor, Vickers, and Co.
Stewart and Smith.
Dixon and Sons.
Marsh Brothers and Co.
Joseph Rodgers and Son.
William J. Horn and Co.
Manufacturers, Sheffield.
John Scott Russell, C.E., F.R.S.
Charles Hood, F.R.S., Iron Merchant.
William B. Carpenter, M.D., F.R.S.
James Booth, LL.D., F.R.S., Chairman of the Council of the Society of Arts.
Edward Solly, F.R.S.
Robert Hunt, F.R.S.
Thomas Bennet Lawes, F.R.S.
Thomas Webster, M.A., F.R.S.
George Rennie, C.E., F.R.S.
Thomas Henry Maudslay, C.E.
David Mushet.
Thomas Page, C.E.
Alexander Gordon, C.E.
Evan Hopkins, F.G.S., C.E.
Joseph Cubitt, C.E.
D. T. Evans, Barrister, Author of Letters on the Iron Industry of South Wales.
Macnaught, Thomas, Robertson, and Co., Iron Merchants.
Thomas M. Paine, R.A.S., Surrey.
John Thomas Way, R.A.S.
Edward Rae, Wilsden-house, Wilsden.
John Fowler, C.E.
Boyd and Chapman, 78, Welbeck-street.
James S. Wickens, 35, Mortimer-st., Cavendish-sq.
R. Middleton, Mining Journal.
William Burton, 39, Oxford-street.
Thomas Brettell, 35, Rupert-street.
John Leslie, 59 and 60, Conduit-street.
&c. &c. &c.

Proceedings of Institutions.

BOSTON ATHENÆUM.—On Tuesday the 17th of June, was inaugurated the new building, erected on the site of the old Green Dragon-inn, Market-place, and forthwith to be occupied by the members of the Boston Athenæum, for the purpose of a Literary and Scientific Institution. The building has been erected by the directors of the Corn-exchange Company, the Athenæum members being the tenants. The front façade of the Athenæum is in the modern Italian style of architecture, executed entirely in the fine material of the Ancaster quarries, and consists of three stories, each having its individual character. The apartments of the Athenæum comprise the upper part of the building, and consist of a reading room, occupying the whole of the front, 35ft. 6in., by 26ft. 6in., and 17ft. high. The library occupies the back, and is 30ft. by 16ft.; a librarian's room is attached. Over the reading-room is a large room suitable for lectures, readings, and other purposes, with rooms for classes, &c., attached. The ground and basement stories are appropriated to a shop and warehouse, with living rooms attached. The building has been executed from the designs and under the superintendence of Messrs. Bellamy and Hardy, architects, of Lincoln, and the clerk of works, Mr. John Saville, who has carried out faithfully their designs. A *dejeuner*, to celebrate the opening, took place at the Assembly-room at three o'clock, and was attended by a large and highly respectable company, including many of the gentry and clergy of the town and neighbourhood. The chair was occupied by the Mayor (F. Cooke, Esq.); the President of the Athenæum (Thomas Garfit, Esq.) and Alderman Noble acted as vice-chairman.—The MAYOR in proposing the first toast—the "Health of the Queen," after describing the advantages derivable from Literary and Scientific Institutions, and the good that must result from the extension of education, spoke of the aid the Queen was ever ready to offer to societies established for the promotion of art and science, and said her Majesty entitled herself to the love of her subjects as much by regard for Institutions of an elevating and philanthropic character as she did by the maintenance of those strictly constitutional principles which had so pleasingly marked her reign. In introducing the next toast—" Prince Albert, the Prince of Wales, and the rest of the Royal Family," the MAYOR said every one knew the Prince Consort's devotion to the arts and sciences, and the interest he took in establishing Institutions similar in character to that they were now celebrating. As for the Prince of Wales, his education was such that they might fairly augur much from him.—Mr. White proposed the " Army and Navy." —Mr. JEBB returned thanks. He was ready to respond to the call, though he scarcely knew why he should have been named to return thanks for the toast, unless it was because he had three sons in the military service. He felt he was placed in a position of some difficulty, though he was relieved in a great measure by the address of Mr. White, who had done ample justice to the merits of the army; and he need only add his assurance that the honour and safety of this county might be safely reposed in the army and navy. The late war had shown the estimable qualities of both services. He could not refrain from repeating an observation made by General Williams on his landing at Dover on Saturday last, as it was one which could not be too carefully stored up. The Corporation of Dover, anxious to do honour to a soldier of so much renown, presented the General with an address, and in the course of his reply, General Williams said, " Woe to the nation that forgets the military art! Woe to that nation who heaps up riches, but who does not take the precaution to defend them!" Before he concluded, Mr. Jebb alluded to the occasion on which they had met, and augured well of the prosperity of the Athenæum by seeing the entertainment graced by the presence of so many ladies, and countenanced by so many gentlemen from the neighbourhood. He thought the Institution might be made serviceable to the country people, who could avail themselves of the market-day attendance to procure books.—The MAYOR announced that Mr. Cabbell, M.P., though unable to attend, had testified the interest he took in their proceedings by making a donation of 10 guineas towards the funds of the Athenæum.—Mr. W. GARFIT then proposed, " The Clergy and Ministers of Religion," which was responded to by The REV. G. B. BLENKIN (the Vicar), who was warmly received. He said he was grateful for the opportunity thus afforded him of testifying the sincere interest he felt in Athenæums in general, and in that of Boston in particular. It had been frequently charged against the clergy of the church that they did not manifest any interest in promoting science and the arts, because it seemed to have been thought that science and religion were in antagonism, and that faith and reason could not satisfy their respective claims. There might have been times when such charges were true, but they were in the dark ages. In Galileo's time, they all knew, science did experience trials and dangers; but since the blessed light of the Reformation had dawned on the world, and the glorious liberty of Protestantism had shed its benign influence on nations, the charge had ceased to be any longer true. When science was made, as she ought ever to be, the handmaid and not the mistress of religion—when reason subjugated herself and bowed at the feet of the cross, and talent consecrated its pen to Him by whom talent was given — then the ministers of religion could candidly go onward and hold out the right hand of fellowship to those who desired to promote the arts and extend the mental capacity of man. He held in his hand a letter from a gentleman who had done more for science than any other living man—Adam Sedgwick—one who had indeed, by his inquiries, found sermons in stones, and illustrated and proved from geology the truth of God's holy word. In that letter he expressed his sincere regret that, owing to a long illness, and being in residence as a Canon of Norwich, he was not able to be present at the opening of the new building for the Athenæum. The Vicar concluded by expressing his earnest hope that the Boston Athenæum would prove a handmaid to religion, and make its members not only more cultivated in intellect, but better Christians, better citizens, and better men.—Sir Chas. Anderson next rose and proposed, "Success to the Boston Athenæum." He assured the company their object in promoting the interests of the Athenæum had his entire sympathy, because he felt convinced that, if such Institutions were properly conducted, they must tend very much to benefit society at large. What was wanted was judicious education of the people; and in proportion as that education was extended would the moral and social condition of the people be improved. There were three points connected with education which it was necessary should be borne in mind—the intellectual, the moral, and the practical education which was useful in every man. The intellectual and the moral, without the practical, would be of very little use. Practical education—that which enabled a man to fulfil his duties in the station he occupied—was the education most wanted in this country. This was a subject, however, on which he need not now enlarge. He would simply observe that it was desirable that practical education should be diffused, the effect of which would be to make better citizens and better men.—The President of the Athenæum (Mr. Thos. Garfit) in responding to the toast, said there could be no doubt that Institutions of this kind, although of recent growth, had attained considerable importance, and exercised great influence throughout the country. They had not only been joined by large numbers of those classes for whose benefit they were intended, but they had received the countenance and support of many of the ablest, wisest, and best men of the age. They had received the sanction of the Legislature, and also of many large and important Societies, among whom perhaps stood foremost the Society of Arts. He (Mr. Garfit) well remembered hearing Lord Granville say, at an important gathering at the Crystal Palace, over which the Duke of Argyll presided, that the Society of Arts, and the kindred Societies in Union with it, might be looked upon as the Zouaves of literary institutions, as, like those bold troopers, through whose daring, zeal, and impetuosity a path was opened for more regular and systematic operations, they paved the way for the establishment of associations whose object was the spread of knowledge, and so acted as the pioneers of general education. The utility of any particular institution depended on the amount of support it received, and the manner in which it was managed, and he felt bound to say that the management of the Boston Society reflected considerable credit on the members, and had been of considerable advantage to the public.—Mr. W. H. Adams then proposed, "The Society of Arts, Manufactures, and Commerce, and the Institutions in Union with it." It was, he said, a toast that in itself carried such strong recommendations, that to entitle it to a proper reception he need scarcely do more than read it as it was set down in the paper; indeed, it might be thought an act of presumption on his part if he attempted to enlarge on it. Still he could not refrain from expressing the warm approbation he felt for the Society of Arts, which had done so much to extend a love for education, and by its fostering care to bring other Societies into vigorous and useful exercise. The Society of Arts had pursued a course exactly the opposite of that which marked the proceedings of the men of power in the days of Galileo. Then the possessors of knowledge, feeling the power it gave them, endeavoured to keep that power within their own hands. The Society of Arts, feeling also that it had the power which knowledge confers, was anxious to extend that power, and one of its acts was found to be to lend its aid to other Institutions having for their object the spread of enlightenment and scientific discovery—to extend a knowledge, amongst other things, of that very science in the cause of which Galileo became a martyr. The Society of Arts was not desirous of retaining within its own hands the privileges which it had acquired, but had scattered them in widespread streams through the country, and was glad to hail as belonging to themselves the many Societies now affiliated with them. There was a time when it became necessary to enact penal laws against societies that had their heads in London and branches in the country; but the knowledge spread by those Corresponding Societies was used to overthrow "the powers that be." They lived in happier times than those. They lived in times when intelligence had been diffused so extensively that it was no longer necessary to confine political power to its former limits, for the masses of the people were becoming better fitted to deal with public questions, and to exercise political privileges with integrity and discretion. In one respect the Society of Arts might be said to resemble the old Corresponding Society. In those days that Society sought to overthrow an empire—an empire which was established in the hearts of millions, and which he hoped would endure for many generations. The Society of Arts also sought to overthrow an empire—but that was the empire of ignorance; and happy would they all be if they could see that empire utterly and entirely overthrown, never again to rise. It was gratifying to him (Mr. Adams) and to a few others than present, to witness the proportions into which the old Institute had expanded. He believed there were only six, who presided at its birth, now remaining, and some of them had grown gray in the cause of public education. The old Institute must be considered as the germ of the Athenæum, and they who assisted at the birth could not fail to rejoice now that it had attained its present maturity. He had only to express a hope that other kindred institutions might be able to obtain an equally good building; and the best wish he could utter was that throughout the length and breadth of the land every town and village and hamlet might have its society to bring instruction to every man's door, so that if he remained ignorant, his ignorance might be his own fault and the blame on his own head.—Mr. H. Gore returned thanks. He gave a sketch of the objects of the Society, its operations, and the great assistance it rendered to Institutions in Union with it.—The Rev. J. Wilson, of Wigtoft, proposed "the Mayor and Corporation of Boston;" and the Mayor returnen thanks.—The Rev. H. Holdsworth proposed "the Corn-Exchange Company."—Alderman Noble said, without the gentleman who had come forward to subscribe their money to the Corn Exchange they would have been unable to obtain such a building as they had now got for the Athenæum; and the advantage would be felt to be the greater when they remembered the room they had come from. At a *Soiree* in the Assemby-rooms a few years ago, the Earl of Yarborough suggested that an appropriate building was desirable, and his lordship tendered a handsome subscription towards the object. Mr. Adams also offered a liberal sum, and other gentlemen expressed their readiness to assist, but they never could have got sufficient funds without the aid of their country friends; and when the agriculturists came forward and put their hands in their pockets, that solved the difficulty. He was glad to find they could attribute so much to those for whom they were indebted for the bread they ate, as, besides their disposition to befriend them, it showed that the land had not quite gone out of cultivation yet. It showed also that they were increasing their taste for literature, and that the inhabitants of the town and the inhabitants of the country would be likely to go hand in hand together. In returning thanks on behalf of the Corn Exchange Company, he was pleased to acknowledge that they owed a debt of gratitude to the farmers and landlords in the neighbourhood for the manner in which they came forward to assist the interests of the Institution. Mr. W. E. CHAPMAN proposed the Members for the Borough. —Mr. MARK LEMON returned thanks on behalf of Mr. Ingram, who was prevented from attending by pressing engagements, and also by an accident which had happened to his mother. Mr. Ingram, however, expressed the deep interest he felt in the prosperity of the Athenæum, and had forwarded a cheque of ten guineas to the funds.—The *Déjeuner* was followed by a *Soirée* at the Corn Exchange, which was attended by a large number of persons, the President of the Athenæum, Mr. Garfit presiding, The following resolutions were passed:—1. "Resolved that, in the opinion of this meeting, the numerous Scientific and Literary Institutions which have been established of late years afford a very powerful aid to the best interests of all classes of society, by enlarging the field for the exercise of the intellectual faculties, by strengthening the ties of brotherhood and social feeling, by affording constant opportunities for self-improvement, and by the free and cordial communication of useful knowledge."—2. "That this Institution, in its enlarged and improved state, promises to be eminently conducive to the happiness and well-being of the inhabitants of the town and neighbourhood of Boston, and possesses just claims to confidence and support." The proposer thought an itinerant library in the neighbourhood would be a great instrument of improvement. It might be made to radiate through whole villages, and thus find its way to many hands, eyes, heads and hearts. 3. "That the best thanks of the meeting be given to Sir Charles H. J. Anderson, Bart., Dr. R. G. Latham, Henry Gore, Esq., Mark Lemon, Esq., the Rev. E. Larken, and the other distinguished visitors who have obligingly honoured the inauguration of the new Boston Athenæum with their presence."—4. "That the thanks of this meeting be given to the Worshipful the Mayor, the President, the Vice-Presidents, Committee, Honorary Secretary, and Officers of the Society, for their generous and efficient services." The proposer alluded in praiseworthy terms to the exertions, on this as well as on all occasions, of Mr. J. W. Bontoft, the honorary secretary, who spared no pains, and thought nothing too much trouble, that was likely to advance the interests of the Institution.

MEETINGS FOR THE ENSUING WEEK.

MON.	Entomological, 8.
TUES.	Zoological, 9.
WED.	Literary Fund, 3.
SAT.	Royal Botanic, 3¾.

To Correspondents.

ERRATUM.—In last No., p. 568. col 2, under head "Examinations," 1st line, for "I," read "We."

PARLIAMENTARY REPORTS.

SESSIONAL PRINTED PAPERS.

Delivered on 14th and 16th June, 1856.

Par. No.
280. Waterford Post Office—Return.
204. Secretaries of State—Returns (a corrected copy).
168. Bills—Cambridge University (as amended in Committee, and on Re-commitment).
175. Bills—National Gallery (as amended by the Lords).
176. Bills—Survey of Great Britain, &c.
177. Bills—Hospitals (Dublin).
178. Bills—Seamen's Savings Banks.
Convict Discipline and Transportation (Australian Colonies)—Further Correspondence.
Sardinia—Convention.

Delivered on 17th June, 1856.

254. Prisons—Return.
268. Guns—Return.
271. East India—Home Accounts.
278. Ecclesiastical Commission, &c.—2nd Report from Committee.
282. Conveyances of Land (Ireland)—Return.

Delivered on 18th June, 1856.

163. Prisons (Separate Confinement)—Abstract of Return.
275. Naval Prize, Bounty, &c.—Account.
265. Nawab of Surat Treaty Bill—Minutes of Evidence, Parts 1 and 2.
180. Bills—Mercantile Law Amendment.
181. Bills—Mercantile Law (Scotland) Amendment.
182. Bills—Hay and Straw Trade.

Delivered on 19th June, 1856.

284. East India (Pension to the Marquis of Dalhousie)—Resolution of the Court of Directors.
286. Militia (Regiments Volunteered for Service Abroad)—Return.
287. Fisheries Board (Scotland)—Copy of a Treasury Minute.
174. Bills—Deeds (Scotland).
179. Bills—County Courts Acts Amendment.
183. Bills—Marriage Law (Scotland) Amending.

PATENT LAW AMENDMENT ACT.

APPLICATIONS FOR PATENTS AND PROTECTION ALLOWED.

[*From Gazette June 27th*, 1856.]

Dated 29th March, 1856.

768. Charles Durand Gardissal, 10, Bedford-street, Strand, London —Certain improvements in machinery for sweeping streets and other ways. (A communication.)

Dated 14th May, 1856.

1140. Alphonse Meillet, 39, Rue de l'Echiquier, Paris—An improved artificial stone for grinding, sharpening, and polishing.

Dated 22nd May, 1856.

1224. Charles Barreswil, Paris—Improvements in gas meters.

Dated 10th June, 1856.

1374. Henry Wagner, Everett-street, Russell-square—Improvements in beds and mattresses, and in similar articles of bedding.
1376. William Brookes, 73, Chancery-lane—Improvements in the treatment of corn. (A communication.)
1378. Perceval Moses Parsons, Duke-street, Adelphi—Certain improvements in the permanent way of railways.
1380. Armand Eugène Preux, Paris—Warming railway and other vehicles.
1382. William Wilson, Newcastle-upon-Tyne—Improvements in machinery for pulling the hair from coney and other skins. (Partly a communication.)

Dated 11th June, 1856.

1383. Henry Benson James, Derby—Improvements in moulding metallic castings.
1384. William Henry Westwood, Thomas Wright, and Edward Wright, Queen's-cross, Dudley—An improved stop or regulating valve.
1385. William Bayliss, Birmingham—A new or improved manufacture of ornamental metallic tubes.
1387. James Combe, Belfast—Improvements in machinery for carding and roving tow, and other fibrous substances, part of which improvements is applicable for transmitting motion in other mechanism.
1388. Alfred Vincent Newton, 66, Chancery-lane—Improvements in breech-loading fire-arms. (A communication.)

Dated 12th June, 1856.

1389. Richard Archibald Brooman, 166, Fleet-street—Improvements in the manufacture of spoons, forks, and other similar articles, and in the machinery employed therein. (A communication.)
1390. James Eives, 17, Cornhill—Improved machinery for extracting oil from oleaginous seeds. (A communication.)
1391. Philip Wesley Hardwick, Gibson-square—An improved manufacture of tickets for railway and other uses.
1392. Philip Unwin and John Unwin, 124, Rockingham-street, Sheffield—Improvements in the manufacture of pen and pocket knives.
1393. Daniel Spill, Stepney-green—Improvements in purifying spirits of tar or coal tar naphtha.
1394. James Fairclough, Liverpool—An improved expander and contractor for dining tables.

1395. John Stenhouse, 15, Upper Barnsbury-street, Islington—Improvements in the preparation of a decolourising material, suitable for the treatment of acid, alkaline, and neutral solutions.

1396. Charles John Lewsey, Albion-terrace, Commercial-road East—Improvements in sugar cane mills.

1397. George Louis Stott, St. George's, Gloucester—Improvements in purifying gas.

Dated 13th June, 1856.

1398. Thomas Cowburn, Manchester—Improvements in valves for reducing the pressure of steam or other liquids or fluids.

1399. William Massey, Manchester—Improvements in looms for weaving.

1400. Constant Jouffroy Dumèry, Paris—Improvements in machinery to be used for manufacturing shoes and boots.

1401. William Richard Whitmore, Cambridge-terrace, Clapham-road, Surrey—Improvements in multitubular steam boilers.

1402. William Mason, Pembroke-dock, Pembroke—An improved rowlock for boats.

1403. John Le Cappelain, 42, New Bridge-street, Blackfriars—Improvements in machinery for bending sheet iron into corrugated forms for constructing beams. (A communication.)

1404. Servans De Jong, 17, New Hampstead-road—Improvements in warming and ventilating apartments and buildings.

1405. William Jacot, Molyneux-place, Water-street, Liverpool—Improvements in fire-arms. (A communication.)

1406. Peter Armand le Comte de Fontainemoreau, 39, Rue de l'Echiquier, Paris—Certain improvements in ship-building. (A communication.)

Dated 14th June, 1856.

1407. Hypolitte Mège, Paris—Improvements in the manufacture of bread.

1408. Joseph Bunnett and Joseph George Bunnett, Deptford—Improvements in the manufacture of sash-bars, columns, and mouldings, for building and decorative purposes.

1409. Jean Etienne Machard, Annecy, Piedmont—Improvements in printing or dyeing skeins, tissues, or other textile fabrics of cotton, wool, flax, and other fibrous substances. (A communication.)

1411. Peter Armand le Comte de Fontainemoreau, 39, Rue de l'Echiquier, Paris—Certain improvements in metallic packing for stuffing boxes and pistons. (A communication.)

1412. Etienne Auguste Aublet, Paris—Improvements in rotary engines.

1413. William Wright, Forth-street, Newcastle-on-Tyne—Improvements in the manufacture of articles of glass and plastic materials by means of pressure.

1414. William Seed, Preston—Certain improvements in "Lap machines," or apparatus used in the preparation of cotton and other fibrous substances for spinning.

1415. Edward Lindner, New York, U.S.—Improvements in breech-loading fire-arms.

Dated 16th June, 1856.

1416. Joseph Sutcliffe and James Leech, Rochdale—Improvements in machinery or apparatus for opening, cleaning, and preparing cotton, wool, and other fibrous substances.

1417. Charles Desnos, Bedford-street, Strand—Improvements in furnaces for consuming smoke. (A communication.)

1418. Edouard Guerin, Paris—A self-acting apparatus for working railway brakes.

1419. William Henry Barlow, Derby, and William Henry Woodhouse, Parliament-street—Improvements in connecting and securing the ends of rails of railways.

1420. James Ball Mannix, Westminster—A method of applying locomotive power to the working of inclines. (A communication.)

1421. William Turner, Tunnicliffe, George Hulme, 4, George-street, Rochdale, and Henry Blackburn, Milnrow—Improvements in condensing and other carding engines, billies and mules for carding, slubbing, and spinning woollen, cotton, or other fibrous substances.

Dated 17th June, 1856.

1422. John Gedge, 4, Wellington-street South, Strand—Improvements in building materials. (A communication.)

1423. John Gedge, 4, Wellington-street South, Strand—An improved pump reservoir, and apparatus for measuring liquids. (A communication.)

1424. Joseph Davis, Birmingham—A new and improved method of manufacturing the small coke, commonly called breezes, which said method of manufacture economises heat, and effects the suppression or partial suppression of smoke.

1425. Henry Holland, Birmingham—Improvements in the manufacture of umbrellas and parasols.

1426. John Sadler, Josiah Green, and Thomas Davis, Birmingham—Improvements in the manufacture of hinges.

1427. Arthur George Baylis, Redditch, Worcestershire—An improvement or improvements in needles.

1428. James Eives, 17, Cornhill, London—An improved dynamometer—(A communication.)

1429. John Henry Johnson, 47, Lincoln's-inn-fields—Improvements in the treatment of sugar canes, and in the apparatus employed therein. (A communication.)

1430. Frederick Collier Bakewell, 6, Haverstock-terrace, Hampstead—Improvements in percussion bomb shells. (A communication.)

1431. William Baynton, High-street, Bilston—Improvements in rolling rails for railways.

1432. Alexandre Depai, 53, Rue de Bercy, Paris—Improvements in brakes for railways.

1433. Christopher Nickels, Albany-road, Surrey, and James Hobson, Leicester—An improvement in weaving when Jacquard or other ornamenting apparatus is employed.

Dated 18th June, 1856.

1434. Raymond Leopold de Berenger, Enfield—Improvements in nosebags.

1435. Thomas Burton, Padiham, near Burnley—Improvements in machinery or apparatus for sizing and dressing warps, yarns, or threads.

1436. Walter Henry Tucker, Fleet-street—Improvements in locks and latches.

1437. Matthew Andrew Muir and James McIlwham, Glasgow—Improvements in looms for weaving.

1438. Charles Clifford, Temple—Improvements in boat-lashings, and in blocks and apparatus used for raising and lowering boats and other articles.

Dated 19th June, 1856.

1441. George Tillett, Clapham—Improvements in bedsteads.

1443. Francis Gybbon Spilsbury, Chaudfontaine, Belgium—Making soda and alum.

1445. Theodore Schwartz, 67, Gracechurch-street—An improved brick.

1447. William Mills, 2, Lower Craven-place, Kentish-town—Improvements in pianofortes.

1449. Jacinto Dias Damazio, Lisbon—A new process of making illuminating and heating gas by a double distillation without retort. (A communication.)

INVENTIONS WITH COMPLETE SPECIFICATIONS FILED.

1439. Charles Edmond Green, 13, Blandford-street, Portman-square—Improvements in tents, huts, and camp hospitals.—18th June, 1856.

1450. William Radley, High-street, Peckham—Improvements in machinery, apparatus, materials, and processes for preparing and treating auriferous, argentiferous, and cupreous rocks, minerals, and alluviums, parts whereof are applicable to other purposes.—20th June, 1856.

WEEKLY LIST OF PATENTS SEALED.

Sealed June 27th, 1856.

2938. George Chisholm.
2948. George Royds Birch.
2956. Archibald Turner.
22. John Henry Johnson.
28. Charles Marsden.
30. Henry Bach.
62. Henry Stuart and Thomas Pritchard.
116. John Abraham.
166. Peter Armand le Comte de Fontainemoreau.
436. David Auld and John Stephen.
481. Louis Arnier.
698. William Clay.
758. James Eives.
765. Adolphe Guido.
908. Alfred Vincent Newton.
976. William Henry Balmain and Thomas Colby.
988. Walter Neilson.
1020. John Henry Johnson.

Sealed July 1st, 1856.

8. Andrew Shanks.
14. Frederick Haines.
18. William Alfred Distin.
39. Joseph Betteley.
96. Alexandre Tolhausen.
123. Peter Armand le Comte de Fontainemoreau.
197. Felix Chauchard.
209. Alexander Dalgety.
216. Samuel Statham.
841. Charles Durand Gardissal.
1093. John Henry Johnson.

PATENTS ON WHICH THE THIRD YEAR'S STAMP DUTY HAS BEEN PAID.

June 24th.

1581. William Charles Spooner.
1601. John Fall.

June 25th.

1561. Auguste Edouard Loradoux Bellford.

June 26th.

1569. John Imray.
1570. George Arthur Biddell.

June 27th.

1559. Carlo Minasi.

WEEKLY LIST OF DESIGNS FOR ARTICLES OF UTILITY REGISTERED.

No. in the Register.	Date of Registration.	Title.	Proprietors' Name.	Address.
3850	June 19.	Improved Plough	Fowler and Fry	Bristol.
3851	„ 23.	Carlton Glove Fastening	Thos. J. Shingleton	Bermondsey.
3852	„ 27.	The Double Vest, or Two Vests in One	Jane Grace Webber	11, Charter-house-street.
3853	„ 30.	Design for an Air-tight Bread Tank Lid	Burney and Bellamy	Millwall.
3854	„ 30.	Design for an Air tight regulating delivery Spout for Iron Wheat Tank......	Burney and Bellamy	Millwall.